



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/518,937	03/06/2000	Ajay Divakaran		8894

7590 12/24/2003  
Patent Department  
Mitsubishi Electric Information Technology Center  
America Inc  
201 Broadway  
Cambridge, MA 02139

EXAMINER

NGUYEN, MAIKHANH

ART UNIT	PAPER NUMBER
----------	--------------

2176

DATE MAILED: 12/24/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/518,937

Applicant(s)

DIVAKARAN ET AL.

Examiner

Maikhanh Nguyen

Art Unit

2176

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### ***DETAILED ACTION***

1. This action is responsive to communications: Request for Reconsideration to the original application filed 03/06/2000.
2. Claims 1-13 are currently pending in this application. Claim1 is independent claim.

### ***Drawings***

3. Figures 1a and 1b should be designated by a legend such as -- Prior Art -- because only that which is old is illustrated. See MPEP § 608.02 (g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Alatan et al.**

“Image Sequence Analysis for Emerging Interactive Multimedia Services – The European COST

211 Framework” (Public Release November 1998) in view of **French et al.** (U.S. 6,266,053 – filed 04/1998 – previously cited).

**As to independent claim 1**, Alatan teaches a method for ordering multimedia content, comprising the steps of:

- segmenting the multimedia content to extract objects (*video sequences are decomposed into individual objects ... the segmentation of video sequences into the objects ... The segmentation of images and video into these separate objects; page 802, right column, last paragraph – page 803, left column, first full paragraph*);

- extracting and associating features of the objects to produce content entities (*content extraction; page 802, left column, first paragraph & Content and/or Feature Extraction e.g. the automatic extraction of content of interest in complex video or audio scenes; page 804, table 1*);

- coding the content entities (*the objects are encoded ... the segmentation of video sequences into the objects of interest prior to coding; page 802, right column, last paragraph – page 803, left column, first full paragraph*).

- measuring attributes of each content entity (*page 806*).

Alatan does teach coding the content entities, measuring attributes of each content entity, and ordering the multimedia content. Alatan, however, is silent on “produce directed acyclic graphs of the content entities and assigning the measuring attributes to each corresponding content entity”.

French teaches produce directed acyclic graphs of the content entities and assigning the measuring attributes to each corresponding content entity (*a directed acyclic graph of data ...assigning temporal attributes to each media element; Abstract*)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of French with Alatan because it would have provided the capability for efficiently sequencing multimedia content in the Alatan's system.

**As to dependent claim 2**, Alatan teaches the measured attributes include intensity attributes (*page 806; B section & right column, second paragraph*).

**As to dependent claim 3**, Alatan teaches the measured attributes include direction attributes (*page 806; B section & right column, second paragraph*).

**As to dependent claim 4**, Alatan teaches the measured attributes include spatial attributes (*page 805*).

**As to dependent claim 5**, Alatan teaches the measured attributes include temporal attributes (*page 805*).

**As to dependent claim 6**, Alatan teaches the measured attributes are arranged in an increasing rank order (*pages 802, 803 and 806*).

**As to dependent claim 7**, Alatan teaches the measured attributes are arranged in an decreasing rank order (*pages 802, 803 and 806*).

**As to dependent claim 8**, Alatan is silent on "the step of traversing the multimedia content according to the directed acyclic graph and the measured attributes assigned to the content entities."

French teaches the step of traversing the multimedia content according to the directed acyclic graph and the measured attributes assigned to the content entities (*col.10, lines 39-col.13, lines 26*).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of French with Alatan because it would have provided the enhanced capability for evaluating the appearance or behavior of the scene in particular the global time values of particular elements at the given time instant.

**As to dependent claim 9**, Alatan is silent on “the step of summarizing the multimedia content according to the directed acyclic graph and the measured attributes assigned to the content entities.”

French teaches the step of summarizing the multimedia content according to the directed acyclic graph and the measured attributes assigned to the content entities (*col.7, line 53-col.8, line 62*).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of French with Alatan because it would have provided the enhanced capability for evaluating the appearance or behavior of the scene in particular the global time values of particular elements at the given time instant.

**As to dependent claim 10**, Alatan teaches the multimedia content is a three dimensional video sequence (*page 806*).

**As to dependent claim 11**, Alatan is silent on “nodes of the directed acyclic graphs represent the content entities and edges represent breaks in the segmentation, and the measured attributes are associated with the corresponding edges.”

French teaches nodes of the directed acyclic graphs represent the content entities and edges represent breaks in the segmentation, and the measured attributes are associated with the corresponding edges (*col.7, line 53- col.8, line 3*).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of French with Alatan because it would have provided the enhanced capability for defining a partition of the space.

**As to dependent claim 12**, Alatan teaches at least one secondary content entity is associated with a particular content entity, and wherein the secondary content entity is selected during the traversing (*pages 802, 803 and 806*).

**As to dependent claim 13**, Alatan teaches a summary of the multimedia is a selected permutation of the content entities according to the associated ranks (*pages 802, 803 and 806*).

### ***Response to Arguments***

5. Applicant's arguments filed 08/28/2003 have been fully considered but are moot in view of the new ground(s) of rejection.

The examiner believes that the combination of Alatan and French meets all limitations as claimed by Applicant.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Salembier et al., "Region-Based Representations of Image and Video: Segmentation Tools for Multimedia Services", IEEE Transactions on Circuits and Systems for Video Technology, Vol.9, No.8, December 1999.

Art Unit: 2176

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maikhanh Nguyen whose telephone number is (703) 306-0092.

The examiner can normally be reached on Monday - Friday from 9:00am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on (703) 305-9792. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-5403 for regular communications and (703) 308-5403 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

**Contact Information:**

Any response to this action should be mailed to:

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Or fax to:

AFTER-FINAL faxes must be signed and sent to (703) 746-7238.

OFFICIAL faxes must be signed and sent to (703) 872-9306.

NON OFFICIAL faxes should be sent to (703) 746-7240.


All OFFICIAL faxes will be handled and entered by the docketing personnel. The date of entry will correspond to the actual FAX reception date unless that date is a Saturday, Sunday, or a Federal Holiday within the District of Columbia, in which case the official date of receipt will be the next business day. The application file will be promptly forwarded to the Examiner unless the application file must be sent to another area of the Office, e.g., Finance Division for fee charging, etc.



Art Unit: 2176

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist). All hand-delivered responses will be handled and entered by the docketing personnel. Please do not hand deliver responses directly to the Examiner.

Maikhanh Nguyen  
December 19, 2003



JOSEPH H. FEILD  
PRIMARY EXAMINER